



**Northern Ireland
Assembly**

**COMMITTEE
FOR EMPLOYMENT
AND LEARNING**

**OFFICIAL REPORT
(Hansard)**

Creation of an Innovation Economy

18 January 2012

NORTHERN IRELAND ASSEMBLY

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FOR EMPLOYMENT
AND LEARNING**

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Members present for all or part of the proceedings:

Mr Basil McCrea (Chairperson)
Mr Thomas Buchanan (Deputy Chairperson)
Mr Jim Allister
Mr Sammy Douglas
Ms Michelle Gildernew
Mr Barry McElduff
Mr David McIlveen
Mrs Sandra Overend
Mr Pat Ramsey
Mr Alastair Ross

Witnesses:

Mr Steve Orr) Northern Ireland Science Park CONNECT

The Chairperson:

Mr Steve Orr, director of the Northern Ireland Science Park (NISP), has, very bravely, come to face you all on his own. You are very welcome. We are looking forward to the presentation. Over to you. When you have done your presentation we will have a few questions. I remind people that, as with all evidence sessions, this will be recorded by Hansard, so make sure that your electronic devices are switched off.

Mr Steve Orr (Northern Ireland Science Park CONNECT):

Thank you very much for inviting me. I have been asked to talk about four different things: the economic transformation that occurred in San Diego; the Northern Ireland knowledge economy index baseline report that we launched at the end of October 2011; some background on what NISP CONNECT is about and what we are doing; and new learnings from the US on the importance of aligning workforce development with the most innovative companies in a region, and the benefits that that creates for the region. I have allowed 10 minutes for the presentation. I have been told that the Committee does not like waffle, so I will go through it very quickly.

The Chairperson:

It does not like it, but it frequently puts up with it. *[Laughter.]*

Mr Orr:

San Diego's transformation occurred over a few decades, but the time frame that I will focus on today is between 1985 and 2005. In 1985, San Diego was a region of 1.8 million people. Some 60% of its economy was dependent on the defence industry, and, at the end of the Cold War, the region faced losing 100,000 jobs because of cuts to the defence budget. Its other dominant industry was tourism; it had very little technology capability and very little progress in research. San Diego is in the bottom south-west corner of the US; the closest thing to it is Mexico. It is about as far away as you can get from Washington DC, where policy is made. It was considered the cul-de-sac of California; it is surrounded by a mountain range, so it is geographically isolated.

Over 15 or 20 years, San Diego's economy transformed into what today is called the knowledge economy. In those 20 years the 100,000 jobs that were lost in the defence sector were replaced by 120,000 jobs that paid in the highest wage bracket. Thirty thousand of those jobs were in biotech, 25,000 were in IT, or information and communication technology (ICT), as we call it here. I do not know whether you think it a good or a bad thing, but the number of attorneys or lawyers in San Diego went from 800 to 12,000.

The Chairperson:

That is not good.

Mr Orr:

With 500 companies, it also had the highest concentration of biotech clusters in the US. It is considered the wireless communications capital of the US, with 525 global brands, such as Qualcomm, Motorola and Nokia. The research base more than doubled in that period, to \$1.3 billion, and there was an eight- to tenfold increase in the amount of venture capital invested in the region, up to about \$1.2 billion. Today, those numbers are even more startling. In 2012, its knowledge economy contains 175,000 jobs, 6,000 innovative companies, and \$3 billion a year is invested in research in the region. The important thing to remember is that its starting position was much further behind where we are today.

It has been analysed many times and many people have taken credit for it, but the objective analysis of San Diego identified six main factors behind that major transformation. The question is always asked: what was the role of government in the transformation? One of government's biggest roles was in the use of land, the role of regional land use decisions of state and infrastructure investments in the fifties and sixties and using state land to attract international research organisations to locate there.

The second thing that the region did was focus on the importance of research and research excellence in the region. It should come as no surprise that those technology company clusters are all located around the research base that was originally land that was generously gifted in one way or another by local government.

The third thing was that the private sector showed real leadership in the commitment of time and resources to contribute many of the skills, knowledge and resources that were required to evolve the economy. They developed a unique culture. "Culture of collaboration" is a trendy phrase locally and across Europe. They designed that model, of which CONNECT has been recognised as one of the major contributing factors, as they say that it goes beyond mere networking or social networking. It involves all the stakeholders in shared agenda setting, shared investment, shared risk and shared rewards.

Another critical thing to which I will come back was the alignment of skills and workforce

development with the most innovative companies in the region and an innovation industry-led focus on skills needed for emerging regions. Even though many of the people who live in San Diego were not born there, there is a powerful sense of place. The place is beautiful, and people care about it and they want to invest their time and their reputation in it.

You have probably heard me mention Mary Walshok today. Mary is the associate vice-chancellor of the University of California in San Diego, and she is one of the founders of CONNECT in San Diego. When she visited 18 months ago, she advised us to do immediately what it took San Diego 20 years to do: see where Northern Ireland was against indicators of our innovative capacity and then benchmark that against the regions that we aspire to emulate.

Mary visited at the end of October 2011, and we launched the knowledge economy index baseline report for Northern Ireland, which was sponsored privately by the Northern Bank. The research was carried out independently by Oxford Economics, which took the report that San Diego uses to benchmark itself against the other regions in California, using those indicators of innovative capacity, and then to see how Northern Ireland was performing.

The context was that we in the Science Park noticed that there is consensus and consistency across elected officials, public officials and industry organisation leaders that we have to evolve Northern Ireland's economy to become a knowledge economy. However, when we get into more in-depth conversations with people on that subject, it quickly becomes clear that there is no consistency of understanding or definition of what that means. In addition, there is no clear vision or ambition behind what it should mean.

I will show you two slides that give examples from the baseline report. The first shows how Northern Ireland is positioned against other regions in the UK where data was available. The brief given to Oxford Economics was to benchmark Northern Ireland against other regions in the UK, Ireland or Europe, depending on where data was available. That is why some regions are included in some of the tables and some are not. First, the number of employees that we have in this sector is very low. As an overall knowledge economy, as you can see on the graph, we are not doing well. Secondly, we are towards the bottom of the league table of the amount of start-up activity in the region.

Against the shared ambition, which has been mostly anecdotal, but then recorded in many economic development strategies about creating a dynamic and innovative economy, we are not performing as well as we would like. However, beneath the data you can see that this region performs well ahead of UK averages in certain sectors — transport and defence, computing and electronics, and software. What we took away from the initial analysis was that it should be no surprise that we are underperforming. Given what we have achieved with the small investment in the sector in this region, imagine what we could achieve with much more.

Oxford Economics also prepared a couple of scenarios. Could we achieve just over 40% of the 120,000 jobs that San Diego achieved in a similar time frame? The blue line on the graph indicates what would happen if we do nothing: the GDP gap remains the same; the needle does not move. However, if we focused and achieved a fraction of what another region in the US achieved, that would create 25,000 new jobs in the knowledge economy and 6,000 new innovative businesses. That number is conservative: there could be 24,000 further jobs in the economy with the employment multiplier and the ripple effect. That is assuming a very conservative employment multiplier of one. The employment multiplier here for indigenous innovative companies should much higher. Moreover, it means an extra £3 billion of gross value added for the region. The important thing on the graph is the red line. That is what we want to achieve here.

Sometimes people’s eyes roll when they hear about what a region in California achieved. However, we are four and a half years into adopting the Californian model and applying it to our own unique context. We have our own challenges and circumstances on which to apply that model. The vision in the Northern Ireland Science Park CONNECT, and all the stakeholders who are coming together around it, is for the transformation of Northern Ireland into one of the most entrepreneurial knowledge economies in Europe. I will not go through it all, but it specifically means that this region will consistently produce new products that become pervasive around the world. It is about products that people want to buy; people in this region make stuff that people around the world want to buy a great deal of. It disrupts markets and industries.

“Innovated in Northern Ireland” will signify innovation and quality that rivals the most

innovative regions anywhere. I have a one-year-old daughter; when she is 20 I want her to be able to work here and not have to leave to get opportunities. Any kid with talent and ambition from here should be able to make it big here. We have to develop a similar culture. Ultimately, what differentiated San Diego from anywhere else was the collaborative culture that it developed that took so many different stakeholders and which, for want of a better phrase, got all the wood behind the arrow. In that context, the core purpose of NISP CONNECT, as an independent non-profit organisation, is to leverage support from all stakeholders, the most experienced business people and the most connected people to help entrepreneurs here to become more successful. The more of them that are successful, the better off everybody will be and the higher the tax taken.

I have included a couple of slides and abbreviated them slightly from Mary Walshok's remarks at the presentation of the knowledge economy index. People in the US realised — although few regions in the US have managed to consider and adapt this — that if you do not align workforce development with the most innovative companies in the region, those companies will have to work offshore or import labour. None of us wants that. We want alignment so that the main stakeholders, the community and the people from here can get access to those jobs.

I will quote some statistics. In Mary's presentation, everybody noticed the similarities between the issues that we face and those that the US faces. The US, in many cases, is a bit further ahead with its depth of understanding and some of the solutions that it is working on to counter the problems. In the United States, 3.2 million jobs are unfilled even though 14 million people are looking for work; and — this is a key statistic — 90% of the jobs created in the US are created by companies that are less than five years old. An organisation called the National Endowment for Science, Technology and the Arts (NESTA) in London did a similar study and found that 60% of all jobs created in the UK were created by the 6% of companies that were innovative start-ups. The main point is that the job creators are innovative start-ups.

London has a fascination with growing big companies; however, big companies look for efficiencies and will seek to work offshore and import labour. Thirty-three per cent of the 47 million jobs that they expect to create in the States over the next decade will require a bachelor's degree, and 30% will require a community college or skill certification. If we want to develop an economy to compete with the States, we will have to think about whether we are developing a

competitive talent pipeline. If not, we will be competing for talent with regions that are good at producing it.

Mary included in her presentation four thoughts on the implications for Northern Ireland. The first is that we need to implement an approach to talent development that supports retooling, reskilling and lifelong competency development. We need to build conversations between diverse employers, private- and public-sector firms, small and large enterprises, skilled trades people and specialists, managers and entrepreneurs, universities, schools and training organisations.

We need to provide resources such as direct investment, scholarships, loans and tax incentives for lifelong learning and reskilling programmes. We also need to embrace the importance of knowing and doing. There should be design education experiences at levels that include project internships and mentors. That is all that I have to say; hopefully it was under 10 minutes.

The Chairperson:

That is fine, Steve. What you have said gives a basis for the better bit, which is direct questioning and intervention. I will say something in a moment. David, would you like to go first?

Mr D McIlveen:

Steve, you mentioned the collaboration projects. I am aware of such projects in other places, which seem to have worked very well. How do they work in practice? Will you elaborate a little? To be blunt, companies will want to serve their own interests and, hence, will probably have very different views on how to move forward with a project. Will you elaborate a little on the logistics of how the whole thing pulls together? Where do you start? Where does a company start? Where do we start to open that conversation?

Mr Orr:

In a nutshell, NISP CONNECT is building a 1,000 person volunteer force made up of very diverse sets of competencies and of people at home and abroad. That volunteer force will include the most experienced and most connected people. We have had to test the willingness of that network to engage in our programmes to help the most promising entrepreneurs pro bono. We

will never pay anybody to do that.

We have found that there are two key motivators for people to engage. In fact, the demand to engage in our programmes became overwhelming and we were not able to cope with it. First, people simply want to give something back. A lot of the most experienced people in the region who are retired are involved in many different things and have unique knowledge sets gained from their experience. Those people are also very well connected in the international markets. That is the first reason why people want to engage in the collaboration programmes.

The second reason is that the programmes are an opportunity for experienced people to come and have a look at new opportunities. Ultimately, because it is an independent non-profit organisation, the people at the centre of NISP CONNECT cannot profit from this in any way; we have to facilitate a process for everybody else. The community has to be able to trust what we are doing. We have learned from what happened with San Diego CONNECT. Mary Walshok, a social scientist, was involved in how it was set up. San Diego CONNECT was intentionally set up to facilitate very experienced people contributing to entrepreneurial education and to provide access to critical resources and capital talent and markets. It also developed crowd sourcing strategies, to use a trendy term.

The willingness of a diverse range of stakeholders and the community of people, both at home and abroad, to engage in that process is overwhelming. The community is given the ability to decide what is good and what is not. As facilitators in this process, NISP CONNECT does not try to pick the winners: we let the community pick the winners and identify what gets taken forward. That is what we have been validating. One of the things that we had to validate was whether the principles behind the CONNECT model would apply here, and they absolutely do. The amount of goodwill has been overwhelming.

You can stop me, or I can go on to talk about why companies are engaging in what we are doing. There are a number of different corporate stakeholders involved in what we are doing. For example, there are professional services firms. We had a laugh at their expense earlier, but lawyers are critical to this whole process, because they are very well connected to markets, money and a lot of the more experienced people, such as those involved in corporate finance and

bankers. They get to see an awful lot of what differentiates successful new companies from those that do not succeed.

We have a number of established science and technology companies in the region engaging with us and looking to become members of NISP CONNECT and contribute funding to our operations. A lot of their motivations are different. Some are quite keen because everybody shares the vision that we have to create a very innovative and high-tech economy and that we should get serious about building a knowledge economy here. So, that is the number one motivation.

Their second motivation is that it is a really good opportunity for them to engage some of their senior technical staff or executive staff in assessing and contributing to the evaluation of other start-ups and innovative new companies, because it helps in their development. It also helps to get those people better networked.

Thirdly, we held a new event programme called Generation Innovation in November last year. That was borne out of the frustration of a lot of the stakeholder science and technology companies at what appears to be a dysfunction between careers development and advice from a lot of the kids who are coming up through our education system, and how many of them are encouraged to consider the law, accounting and medicine professions. The Generation Innovation imperative was centred around one thing, and I hope I do not offend anyone here, but when we are all gone, who is going to remember the accountants? The world has got big problems, and we need our most motivated, our most entrepreneurial and brightest kids to be solving the world's biggest problems. We need them to be forming companies that will be located here.

There is a range of different motivations for people to engage. In San Diego, an analysis of exactly that was done, and the term they came up to captures it all is "return on involvement". Similarly, the demand here is significant.

The Chairperson:

Steve, I know that there is a lot of information to get out, but everyone will want to have a word or two. David, did you want to come back in?

Mr D McIlveen:

Yes. Steve, ultimately what we are talking about is synergies between the two companies or whoever is involved. Is there a formulaic way of identifying those synergies, or is there a suck-it-and-see approach?

Mr Orr:

The reality is that a lot of what NISP CONNECT is about is that new companies can grow fast. If a company has formed, has been around for five or ten years and is stuck, it is difficult for those companies to unlearn their bad habits or to shake off whatever is holding them back. A lot of what we do is to showcase early-stage new concepts from entrepreneurs or innovators to much more experienced people in the marketplace, possibly entrepreneurs or executives who could lead those corporations. It is about facilitating the engagement between those different constituents through a series of programmes, so the most formulaic that we get is the use of these programmes to facilitate the engagement between the really experienced people in the community and the most promising.

The work that has been done looking at regions around the world is quite important, because everybody wants to establish this kind of capability. This is the Holy Grail; the ability to perpetually create new, fast-growth companies that are created from invention or research breakthroughs. Other regions that get this wrong apply very rigid linear programmes to try to facilitate a one-shoe-fits-all approach where everyone goes at the same speed, but the important thing here is that every venture is different. Support for them needs to be customised, and you have to be able to access a very broad pool of competence to be able to help them. So, there is a formula to it. It is a little bit nebulous, but it works.

The Chairperson:

The point, David — I am not sure that it came across — is that all of the job creation is coming from new, high-tech companies which, when they start off, do not have many resources. If you can get resources coming from the previous generation, not only does that help them to succeed, but they are then grateful whenever they have made it, and they feed back. I think that is the essence of the model. Had you finished, David?

Mr D McIlveen:

Yes; that is fantastic, thanks.

The Chairperson:

I want to try, Steve, to get it all out in fairly snappy questions and answers, if we can. Just for balance, I am going to Pat next.

Mr P Ramsey:

Steve, you are welcome to this morning's meeting. You gave us some interesting facts. San Diego's success did not happen overnight; it took decades to get there. Was there a fundamental shift in the retraining of people in the area? You talked about knowledge-based jobs and those requiring third-level qualifications. In America, there are 3.2 million jobs vacant; that is a startling figure. How many jobs are lying vacant in Northern Ireland? How many people are seeking work in Northern Ireland?

The Chairperson:

That is a good point. Pat, you can come back in, but, Steve, the key question is: what was the job skill of San Diego in 1985? What did they do? Pat's second point relates to the skill gap that Mary has talked about. There are 14 million people looking for a job and 3 million positions vacant. It is a similar situation here. Please deal with the first bit. What did San Diego have at the start? What was the situation in 1985?

Mr Orr:

I have a report that was written recently by Mary Walshok for the International Economic Development Council (IEDC). The title is 'The Early Roots of San Diego's Innovation Economy: The Role of Civic Leadership and Land Use Decisions in the Region's Economic Transformation.' I can circulate that to the Committee, if you would like me to. In that paper, Mary talks about how San Diego looked in 1985. In the 1950s and 1960s, they made land use decisions to attract research institutions to the region. They were centred there. Even in the early and mid-1980s, the economy was dominated by services to the defence sector. They were not able to do large-scale agricultural work.

The Chairperson:

It was basically shipbuilding and naval work.

Mr Orr:

Yes, there was a lot of that. Decades before that, San Diego lobbied to get the Pacific fleet located there, so there is a lot of activity around ship maintenance. Services that are provided to the navy and the marines are also located there; there is a lot of work around that.

General Atomics, which had a forerunner company, agreed to set up a research institute on the Torrey Pines peninsula. It was focused on nuclear physics. General Atomics has gone on to become a considerable corporation. There were companies related to defence and tourism. Due to the geographical nature of San Diego, they did not have opportunities for the large-scale agricultural development that many in central California were able to engage in. It was, therefore, also dominated by small farms and small companies. Even today, San Diego has only a couple of Fortune 500 companies. It has many more medium-sized companies. Today, it is dominated by SMEs, as it was then. Importantly, during the transition it was possible for companies to be formed around the research that was done in research institutions. I hope that answers your question.

The Chairperson:

Originally, there was shipbuilding, welding and such things. Then there were the service industries. They had some research capability, but the universities led it into trying to find something on which they could innovate. The key bit was that it was small and medium-sized businesses. It was not really big companies, because they went offshore.

Pat's point about matching the skills with the growing companies is very important, because that is why we have the anomaly of there being vacancies despite the fact that people are looking for jobs.

Mr Orr:

Mary gives the example of Qualcomm, which was set up in San Diego. Coincidentally, it was

founded in 1985. If you stream data to your mobile phone, the chances are that you will be paying a penny or two to Qualcomm. It has the technology behind how data travels over wireless networks. It developed new technology called code division multiple access, and it had to make equipment that would transmit the signals. It needed the engineering and technical talent that would know how to commission that equipment to put it to work. However, as it was a smallish company, it was unable to develop its own staff to do so. It approached the university through the university extension programme and told it that it needed to design bespoke training programmes in those new technologies, and that it could upskill some of the really talented engineers or technicians who were sitting at home and out of work. That was how they originated that process. That is what Mary meant when she talked about the importance of aligning workforce development and the requirements of the smallish and most innovative companies in the region with the talent producers such as the FE colleges and the universities.

We also had a round-table discussion that was published in 'Ulster Business' directly after the publication of the knowledge economy index. Hugh Cormican, the founder of Andor Technology in Belfast, was quite critical when he was asked about the alignment of workforce development with small, innovative companies in Northern Ireland. Small, innovative companies, which are the job creators, are typically unaware of what is available, and many of the programmes that are available, whether in innovative research, R&D or skills development, are designed for bigger companies with internal finance departments and administrative staff, which presents a bureaucratic hurdle. Such programmes are not aligned with needs of the cash-strapped, five-man-band start-up businesses that are trying to get somewhere. Hugh felt quite strongly that there is more that we can do to support that alignment through an understanding of the needs of smaller, innovative companies.

The Chairperson:

We take that point and will come back to it.

Mr P Ramsey:

I have a number of questions, but I will try to be quick so that other members can come in. There are no members sitting around this table who do not have an interest in employability and in ensuring that their constituents have access to employment. Over recent times, Invest Northern

Ireland's strategy has been to attract inward investment in IT and financial services, which are key areas. We always hope and desire that American companies will come here, but, with the state of the American economy, that is becoming less likely. Our aim in the Programme for Government is to create 25,000 new jobs, but, in your document, you state that we need to create 50,000 new jobs to make a difference.

Mr Orr:

That is conservative.

Mr P Ramsey:

How do we get the balance? Are we not being creative enough in generating those jobs?

Finally, your document deals with the collaborative reports that you are undertaking with universities. I do not see the colleges mentioned in your document. However, you can be absolutely certain that colleges make a difference in ensuring that young people, in particular, are better suited for employment opportunities. That is particularly the case in the agrifood sector, but that is another argument for another day, Chair.

The Chairperson:

Your point is well made, Pat. We will take that and you can have one more go if you wish.

Mr Orr:

We are quite early in the process of exploring the imperative of workforce alignment and development with innovative companies. There is a good chance that you are going to ask me about the current status of services or programmes that are available to companies. However, quite honestly, I do not know the answer to those questions. We have not yet begun to explore the current state of play, and what works and what does not.

You asked about the focus on foreign direct investment, but we believe that Northern Ireland needs to focus on the importance of creating indigenous entrepreneurs. Everything must be about helping to create entrepreneurs who will become successful and grow companies. Some of those companies will be small, but a few of them will go on to become quite big. If that becomes our

sole focus, we can then start to look at other tactics and what will help to propel that to happen. I support foreign direct investment and the move to reduce corporation tax, but I support that as a tactic to help us propel the workforce and talent development that we need against a longer-term strategy of helping to create the indigenous capability to grow our own companies. If we have that indigenous capability, the leadership of those companies will be located here, they will feel a loyalty to here and they will not move anywhere else because of a tax cut.

The Chairperson:

We get that general point about indigenous SMEs. The point Pat raised about FE colleges is significant. Mary mentioned community colleges in the States. What is the importance of those?

Mr Orr:

The examples that Mary gave from certain regions in the States were important. Look at the new innovative markets and sectors that are emerging. Let us take biofuels, for example. The mistake is often made that all of the talent development has to focus on the people in white coats: the pointy-headed people, if you like. Whereas, if you look at the biofuels industry that has sprung up overnight in San Diego, you find that it is a pipe fitters' business. Because of the growth of that sector in that region, they have had to look much more strategically at how the real volume of jobs created for pipe fitters will be filled.

The Chairperson:

Plumbers, basically?

Mr Orr:

Yes, absolutely. The same thing is true for the production of wind turbines. Machinists and welders are important. I am most familiar with the situation in the US, because of Mary's analysis, and at the minute, there are hundreds of thousands of job vacancies for welders. What can be done to change the existing skills in the workforce? That is the importance of constant reskilling and retraining. Those markets will move and the imperative in talent development is that it keeps up with the markets as they continue to evolve.

The Chairperson:

Just let me say that, because you are a welder in a shipyard, it does not mean to say that you cannot be a welder of wind turbines.

Mr Orr:

If you can go through the appropriate training — it is probably not even that much — and acquire the qualification, you can do it. However, if that cross-training and qualification does not exist, the staff must be imported from elsewhere.

The Chairperson:

This is a good point at which to move on to Sammy.

Mr Douglas:

Thank you, Steve, for your presentation. I had a number of questions, but you have answered them all apart from the last.

Last night, I read an article by a guy called Gary London, and the heading ran:

“Despite Adversity San Diego Is an Economic Success.”

I would love to read an article in the future headed:

“Despite adversity, Northern Ireland is an economic success.”

I hope that happens.

You mentioned SMEs. The article says that the small businesses were the unsung heroes of the situation in many ways. Some 68,000 jobs were created in small businesses. I return to what you said about the pipe fitters. How does it filter down to long-term unemployed people? We had a discussion about that yesterday in the Assembly. All of us are facing difficulties in relation to unemployment among young people in particular. Are you aware of any initiatives or organisations in San Diego that are like the Department for Employment and Learning?

Mr Orr:

I chatted with Mary about this on her last visit. I asked whether they aligned what they did

specifically with disadvantaged communities at the beginning, and whether that changed as the situation evolved. The San Diego experience was that the imperative at the outset was to focus on something that can help to create opportunities for anyone. It goes back to the point about those with talent and ambition. This is ultimately about meritocracy. Anyone who has the talent or ambition should be able to become successful to whatever degree. They should be able to get access to the opportunities. At the beginning, they were careful not to try to solve every problem. Their core purpose was to develop this regional capability to make entrepreneurs more successful and create fast-growth companies and to take out of the research base and build companies around it.

As San Diego has evolved, the demographic of the region has evolved too, and so one of the biggest issues facing California at the minute is the supply of new talent. That will never change. The demographic in the region has shifted. The Latino population is heavily represented, so it is about how they develop and align their programmes, systems and education to start to facilitate access for communities who thought it would never be possible for them to engage in those kinds of opportunities. At the outset, they felt that it was important to retain a core focus on creating something that can create opportunity for anybody, with the focus on helping entrepreneurs to become successful.

The Chairperson:

That does filter through. The key thing is that they need talent, so they go to areas where they might not normally have gone. In their particular case, it is the Latino population. We might have different groups in our society, but it is basically about saying, “There is a job, train up. If you do a bit more, you get more money.” The fundamental thing is that they are not boffins; they are not the people in white coats. They are doing other things.

Mr Orr:

The important thing is the employment multiplier. I will give two examples, which may or may not be relevant here, to illustrate that. The Microsoft Corporation in Washington state, which is a similar size to here, did some analysis of the number of jobs that are created outside Microsoft for every job in Microsoft, and found that there was an employment multiplier of 5.61. Every job in Microsoft created 5.61 jobs outside Microsoft in Washington state alone.

Every job in Boeing creates around eight jobs outside of it. I am not certain of the exact number, but that figure is close enough. That is the importance of creating indigenous companies and indigenous leadership in a region, because it creates opportunities for the supply chain. For example, if it is a FDI company, those opportunities do not exist. If you have a workforce that is doing well, they are going out buying houses and spending money in shops, and the employment multiplier starts to ripple through the economy and create opportunities. That is the most important point.

I do not think employment multipliers are recognised or considered in Northern Ireland at the minute, just from the questions that I have asked anecdotally, but it is a really important point. We are making a recommendation at an event that we are doing in the next stage of the knowledge economy index in the middle of February that we look at the most innovative companies here and the employment multipliers that have been generated from that. You need to look at the impact. Look at Andor Technology, for example. I do not think that is understood.

The Chairperson:

Sammy, that was one of the things that you came across when you were looking at the cancer centre. It was not just the people in white coats; it was the multiplier effect. We are very keen to get that message across. Steve, you might keep us in the loop for that event in February.

Mr Douglas:

I hope that this is not an unfair question, but I am sure that you have noticed some of the recent media coverage around a possible visit to San Diego. Some members thought that it was not a good idea, but do you think that it would be important for this Committee, or possibly not this Committee if we are joined with the Committee for Enterprise, Trade and Investment or whoever, to go on a visit to San Diego?

Mr Orr:

I do not understand what is going on with the Departments, so I cannot comment on whether it is appropriate for a Committee visit. However, if the question is: should we learn from other regions? My answer is absolutely. I was an entrepreneur in California and San Diego for years,

and I spent two years self-funded hanging out at CONNECT to learn the model because I thought that the man-made transformation that they achieved in that region was incredible, but I wanted to understand how they did that. If I had not done that, I would not be here today talking with a little bit of knowledge of what was achieved there.

If the Committee is to pick a region to study, the first thing that it should do is agree its vision of what Northern Ireland must aim to achieve. I mentioned that, in the middle of February, we will host a conference for NISP CONNECT members and some stakeholders to set the trajectory for what we believe Northern Ireland's knowledge economy needs to look like in 20 years' time. We are getting on with this. Oxford Economics published an indication of what it might look like: there could be 6,000 innovative companies and 50,000 jobs, which is a conservative estimate, and £3 billion in extra GDP. We have to do that.

If the Committee were to adopt a similar vision, you could apply certain criteria when considering which regions to study. Are there similarities with this region in its geographical isolation, population, industrial legacies, and small farms and small companies that are in crisis? What did the region achieve in job creation and average wage increase? How resilient is the economy today? Has the GDP in that region increased in the past five years while the GDPs of most other regions have decreased? Does the region understand the factors behind its transformation? Are its leaders accessible? It is important to apply those criteria to understand the ambition, as that will help you to make a decision.

San Diego is not a perfect match, but there are similarities between it and this region. San Diego had a man-made transformation; the odds were against them and they did not have natural resources, but they did it. I urge the Committee not to include in the criteria whether a plane ticket to visit that place will cost a couple of hundred quid extra. If the ultimate prize is potentially £3 billion in additional GDP, the public might forgive the Committee for spending a couple of hundred quid extra. Indeed, I do not think that it is extra, as the cost of a flight to the west coast is the same as —

The Chairperson:

I was happy with the bit about the criteria; it was really useful. I will just make it clear for the

record that, in this session, we are not considering trips or anything like that. This session is about taking information.

Mr Douglas:

Chairman, I would like to say —

The Chairperson:

Hold on, Sammy. I will let you back in, but I want to say something.

It is important to make informed decisions. When you have set the criteria, you should go and learn from wherever is the best place to learn from; that is the right thing to do. San Diego was not perfect for your analysis, but it was an interesting comparator and worthy of consideration. However, I will tell you, Steve, that we have also started to look at other areas. Sammy, over to you.

Mr Douglas:

It strikes me, even more so after Steve's talk today, that there are so many comparisons to be made between Northern Ireland and San Diego. Never mind population, it is about the general dynamics. San Diego lost 40,000 jobs in the 1980s, which is comparable to the jobs that we lost in the shipyard, Sirocco works, rope works, linen mills and all that stuff. Perhaps we will come back and say that Invest Northern Ireland is doing a very good job and that there are linkages, but I am not sure that those linkages are there. This is a great opportunity to link Northern Ireland with San Diego, and you are doing a lot of that.

Mr Buchanan:

You said in your opening remarks that you are four and a half years into adopting the San Diego model in Northern Ireland. Are you where you expected to be after four and a half years? You say that start-up businesses create most of the jobs. I have always been a fan of our home-grown businesses, because they are always with us. Are the Department, the Executive and the colleges hitting the key issues to foster our young people to achieve the goal that we want them to achieve; or are we missing something that we need to focus on to gain the end results that we are looking for?

Mr Orr:

The first question was: are we happy with progress after four and a half years? We launched a pilot of NISP CONNECT in April 2008, so we have been doing this for just under four years. It took the first nine months to establish a pilot, and the Northern Ireland Science Park and the universities were critical to that. We did not achieve the funding at the outset for setting up NISP CONNECT, which is located in the science park, so we had to start off by doing it on a shoestring with two people: a lady called Roisin Clancy and I. She will probably blush now, but she is brilliant. In that period with a small team we had to test the principles behind it, the community's willingness to engage, the quantity and quality of early-stage ventures and the foundation on which we had to build. Just under four years from that point, we are nearly at the completion of the full implementation of the model, which is a team of four and a half full-time people. We are expanding and developing the programmes that will help to integrate the research base with the business community and so on.

This has been a start-up in itself, and, personally, I am surprised at how far ahead we are. I also have absolutely no doubt that we will achieve this and that the economy here will transform. The reason for my optimism is that, every day, I meet world-class entrepreneurs and innovators from here who can solve complex problems. We need to develop and rediscover how to make money from that ability to invent, and we need to build and skill companies to raise the collective ambition. Therefore I am very confident about where we are now, and things are progressing speedily. We got critical support from the Department of Enterprise, Trade and Investment to help NISP CONNECT. That was like seed funding to help us to get under way.

The Chairperson:

The Minister of Enterprise, Trade and Investment put funding into your operation.

Mr Orr:

That is correct. She provides 50% of our funding until April 2015; we have to raise the other 50% from independent private sources. That is progressing very well.

The Chairperson:

Tom is particularly interested in SMEs, and there is a feeling here that we ought to pay attention to that sector. How is that going?

Mr Orr:

Based on my own observations rather than an analysis of policy, I think that the priority of economic development for the last while has been that if Northern Ireland has 90,000-odd businesses, the majority of which are small, if 10% or 20% of them could become innovative and export, that would help to close the GDP gap. As I said earlier, if companies got it wrong first time, it is very hard to untangle the reasons to help them to get it right first time.

Much of the language on economic development policy has been around stimulating and encouraging incumbent companies to become innovative and to export; however, it is difficult to lead those horses to water. The holy grail of economic development around the world is to have a unique regional capability to turn invention or research breakthroughs into products and for companies to skill around it. It is a kind of birthing process. However, if something does not work, it is important that the entrepreneurs or the people behind it understand that quickly and stop it. They should not continue with something that, ultimately, will not be successful.

The Chairperson:

Fail fast.

Mr Orr:

Yes. Failure is a positive outcome; you learn more from failure than from success. As a region, there needs to be a much greater emphasis on entrepreneurs being at the centre of economic development. The focus is on existing companies and trying to help them to become more innovative and export more or it is on foreign direct investment (FDI). Those areas have attracted the balance of resources. I have not done any analysis on where the —

The Chairperson:

Should there be more emphasis on the creative indigenous side?

Mr Orr:

The focus should be on entrepreneurs and on the early stages of new companies. I could read the last paragraph of Mary's report to summarise the main points.

The Chairperson:

I am conscious that there is a great deal of information, and I want to let other members in. Are you happy, Tom?

Mr Buchanan:

I am happy enough with what I have heard.

Mr Orr:

Mary states:

“The benefit of entrepreneurial technology clusters to regional prosperity and prominence are enormous, but those benefits need to be translated into strategies that can assure continuing prosperity for middle and working class constituencies as well. To do that requires civic leadership that values a diverse economy and prosperity for all, but it also requires economic development professionals who know how to think in very comprehensive ways. Economic development is not exclusively about inner-city redevelopment or helping poor and disadvantaged workers find jobs. Economic development cannot be exclusively about helping entrepreneurial companies grow their industries and create high-wage jobs in the science technology sector. Economic development cannot be exclusively about attracting large employers into the region who bring jobs with them. More and more, the economic developer has to have the capacity to do all three. It is my hope that the examples from the San Diego experience provided in this brief article help to stimulate economic developers.”

The Chairperson:

Mary seems to be on the same hymn sheet as you, Tom, in her feelings about indigenous small companies.

Mr McElduff:

“Fail fast” is a great term.

The Chairperson:

It is a technical term.

Mr McElduff:

David Norris, the senator in Dublin, talks about failing magnificently and splendidly. *[Laughter.]*

You said that there were six factors behind San Diego's transformation. The fourth was:

“A culture of collaboration which goes ‘beyond networking’”,

The sixth was:

“A powerful ‘sense of place’ which binds people”.

Will you deal briefly with those two issues?

Mr Orr:

Ultimately, the responsibility of NISP CONNECT is to help with the fourth factor. We need a culture change here. When I came home, I was surprised at how siloed the stakeholders in the business communities and in some of the institutions were; they should have been working together. However, I have been greatly encouraged by how quickly everyone has agreed that we all need to push in the same direction and to collaborate to achieve that goal. I have also been encouraged by the willingness of the most experienced entrepreneurs in the region, the companies and the professional services firms to engage, to give their time freely and to contribute money to fund such activity.

The Chairperson:

The concept that we seem to have difficulty with is collaboration. There is a view that business is business and that everyone is a bit cut-throat about it. I hope that it will come up in the next presentation, but San Diego was so small and challenged that the only way out for the people there was to get on with one another, even though they were quite diverse. I was surprised at that spirit of collaboration. It permeates everything there, and I think that that is the bit that Barry wants to know about. What does it look like in San Diego? Does it require us changing our attitudes?

Mr McElduff:

David used the word “synergy” earlier. I understand synergy to mean one plus one giving an outcome greater than two. Presumably, that is what they are achieving.

Mr Orr:

Absolutely. Everything starts with the individual. It has to start with the understanding that if

people unconditionally help others to become successful, something will come back. That helps relationships to form. CONNECT is ultimately a series of principles. One of the most important is what Mary calls the importance of focusing on helping a region to develop its relationships, which ultimately translates into trust. Once a region has the necessary degree of trust, transactions start to occur. Many economic developers around the world think that if they just stick strangers from different companies from the same sector in the same room, they will meet, talk and make transactions. That never works.

The Chairperson:

Is there any similarity between that and the political process? *[Laughter.]*

Mr Orr:

I cannot comment; I do not have a clue. Mary Walshok is a social scientist, and many of the principles of CONNECT originated from an understanding of the behavioural aspects of the Silicon Valley. It is an open and collaborative culture in which people are happy to share their ideas; they do not want to hold on to everything and try to hold ideas back. Therefore when CONNECT was formed, the question was whether those conditions and processes could be artificially replicated to develop understanding between constituents or stakeholders who would otherwise be siloed. We should focus on the participation of those disparate stakeholders, collaborating over helping either through knowledge sharing, opening their contacts or risking reputations for what an entrepreneur is looking to do. That is non-threatening to stakeholders because they collaborate in the process of sharing experience and knowledge, which helps to develop trust. The stakeholder then starts to form new relationships out of it.

This will not be a region-wide process that everybody will engage in; it is targeted at a relatively small niche. The number of people engaging in our programmes will probably number between 500 and 1,000 a year. However, it has to start quite small. Once people see the benefits of being more open and helping unconditionally, those traits will spread to other people; it becomes contagious after a while.

Mr McElduff:

Take Mary with you next time.

Mr Orr:

We are looking to arrange a visit here for her in May.

The Chairperson:

For what it is worth, bringing people into a room and expecting them to get on and do business together just because they are from the same sector is not right, because they will view one another as competitors. I learned that getting the right spirit and getting the right people to work together, sometimes out of necessity, pays dividends.

As a businessperson, you will not go down this route, but this issue is not dissimilar to the political process. Just because you bring people together does not mean that they will work together. I know from this building, the more that people are in one another's vicinity and the more they build on small things and build trust — for example, signing forms for various events — the more you build an environment where you can get things done. There is something there that we should be familiar with.

Mr Allister:

I have two points. You have been in existence for three to four years. In that time, how many jobs have you mentored, sponsored, spawned or whatever the appropriate term may be, in the roll-out of your aspiration?

Mr Orr:

We were operating on a pilot basis, and we are now moving into a full implementation model. The first three years involved two people testing the principles behind the model and their application to this region. Between April 2008 and March 2011, we had more than 700 different early-stage ventures or “wantrepreneurs” — people who are innovators but who aspire to be entrepreneurs. Engagement has been considerable.

Mr Allister:

I understand the concept of people wanting, but what about people delivering? How many jobs have been created by virtue of the contribution of CONNECT?

Mr Orr:

It would take independent analysis to come up with a figure. I could only guess, and I would not be too confident in the accuracy of my guess.

Mr Allister:

Are we in the tens or the hundreds?

Mr Orr:

I do not want to put a number on it.

Mr Allister:

Are there any?

Mr Orr:

Yes. There are definitely jobs. There are definitely outcomes that would not have happened had we not been doing what we are doing.

Mr Allister:

You cannot help us with the quantum?

The Chairperson:

Can you talk about any specific example?

Mr Orr:

Last night, I was in Derry for the launch of a new company called Catagen Ltd, which is a spin-out from Queen's University. The CEO of the firm did a PhD at Queen's and he entered the 25K programme. That programme is designed to be a simple process for smart people in the research base who have decided that they have had a breakthrough, and for the business community to come in and identify, qualify, prepare and present those concepts that are of the greatest potential. Its outline is to identify the intellectual property with the most commercial potential. The company formed a couple of years ago, and last night, to the launch of the product, Andrew

invited the company that will be manufacturing the products that he sells, which will be based in Derry. That is an example from last night. I could go on for quite a long time.

Mr Allister:

I am trying to get some specifics. Can we benchmark the achievements of CONNECT against real jobs?

Mr Orr:

If there were objective analysis, yes, we could.

Mr Allister:

Has that ever been done?

Mr Orr:

Some analysis was done for Matrix Northern Ireland Science Industry Panel a year after we were into the pilot phase.

Mr Allister:

Part of your presentation is about how many jobs were created in San Diego. Therefore, following that template — even though you have not been going for very long — I am a little surprised that you are unable to quantify the number of jobs that you claim are the product of CONNECT.

Mr Orr:

We will be able to do that annually. The Northern Ireland knowledge economy index baseline report will report annually on the number of people employed in the knowledge economy in Northern Ireland.

Mr Allister:

Is there nothing to report at present?

Mr Orr:

The numbers on the screen behind you quantify the number of people employed.

Mr Allister:

Are you saying that the 30,500 employed at present in Northern Ireland in the knowledge economy are there because of CONNECT?

Mr Orr:

No.

The Chairperson:

He is saying, Jim, that they have established a baseline figure, and that is where we are as a comparator to other regions.

Mr Allister:

I understand that. That is the starting point.

The Chairperson:

Yes. He has the starting point, and he is doing a pilot —

Mr Allister:

I am trying to ascertain what the contribution of CONNECT has been to the growth of that figure.

Mr Orr:

The two-person pilot has operated over the past three years, but it would take some objective analysis specifically of CONNECT.

Mr Allister:

The second point that I want to explore with you is this: you have been talking to us for about an hour, but you have yet to mention Invest NI. The reason that I make that point is that Invest NI equally tells us that it is interested in an innovative knowledge economy. Is there a synergy between you and Invest NI, duplication of effort or collaboration? What is the relationship

between CONNECT and Invest NI?

Mr Orr:

Synergy.

Mr Allister:

How does that work?

Mr Orr:

The important thing to accept here is that there are two different roles. The first is the role of facilitator, which focuses on the development of a supportive environment or, as it is termed in the language around this, the “ecosystem”. OK?

The other necessary role is that of funder. Invest NI is an economic development agency that is predominantly there for the distribution of state aid against the priorities identified in the Programme for Government. It is almost impossible for an organisation that distributes funding also to do the facilitation work and the independent, non-profit work that is required as a platform to do the kind of work that a CONNECT organisation does for a region. They are very different responsibilities.

Mr Allister:

Do you collaborate?

Mr Orr:

Yes. We talk, and —

Mr Allister:

On a structured basis?

Mr Orr:

It can be. We met twice in the past two months. That will probably continue on a quarterly basis at least.

Mr Allister:

If Invest NI is driving for the same ambition, as it tells us it is, it would seem surprising that there would not be a great deal of collaboration in order to avoid duplication of effort.

Mr Orr:

I agree. One of the things that we have identified, and which we had to satisfy while we were in the pilot period, was making sure that there was no duplication. During that three-year period we were not aware of any overlap or friction because we did something that Invest NI did or vice versa.

Mr Allister:

Do you know what Invest NI is doing, and does it know what you are doing to create attractions for new companies?

Mr Orr:

Invest NI has a very good understanding of what we do.

Mr Allister:

Is it a two-way process?

Mr Orr:

Yes. When Invest NI considers initiating new programmes, we are included for consideration.

Mr Allister:

You seemed to hesitate. Does that suggest that you think that Invest NI could interplay more with you?

Mr Orr:

No relationship is ever optimal.

Mr Allister:

The feeling that I am getting is that it is not as optimal as it could be.

Mr Orr:

It is good; there is good communication, honesty and co-ordination.

The Chairperson:

I think that we have gone down that line now, Jim. Are you OK?

Mr Allister:

OK.

The Chairperson:

He is the maestro of cross-examination; you might have seen him on TV last night. It is useful to get a few challenging questions, none more so than from Sandra.

Mrs Overend:

Thank you very much. We have had some interesting questions. My rural constituency of Mid Ulster has many small and medium-sized enterprises, so the questions that have come beforehand have been interesting. How has San Diego developed farming businesses? Has that changed or did they just let them go ahead and do their own thing? Secondly —

The Chairperson:

Just hold that question; let Steve deal with the first one.

Mr Orr:

That is a level of detail beyond what I know. Mary could answer that in more detail than I could.

Mrs Overend:

How is NISP connecting with the agribusiness and agrifood sectors?

Mr Orr:

One of the main stakeholders and a very early member of NISP CONNECT is the Agri-food and Biosciences Institute (AFBI). So far, there has been really good engagement with AFBI and integration of its commercialisation activities into our programme. Commercialisation has been a relatively new concept or challenge for AFBI over the past three or four years. It is becoming a priority, because agrifood is the largest sector in Northern Ireland, and there is great potential for new companies to be created from the excellent research that is done in AFBI. Its engagement has been a really good experience so far.

For example, this year a collaborative spin-out company has resulted from some of the unique work that AFBI does with another external bioscience company that we introduced it to. We want to move towards having more of a cluster focus in the next 12 to 24 months. That is one that we are particularly excited about; I think that it will be called Food Tech.

Mrs Overend:

May I suggest that you connect with the likes of the food technology college at Loughry campus?

Mr Orr:

Yes, absolutely.

The Chairperson:

I am sure that Steve would be happy for anyone and everyone to be part of it. I did tell him that politicians also have a role to play, given the collaborative nature of the scheme.

Steve, thank you very much. The session went on a little longer, but that is because there was so much information coming across. Thank you very much for your time. It is interesting to hear what is going on, and we will do our best to spread the word.

Mr Orr:

Thank you very much for your time.

